Responses to Coalition for Buzzards Bay information request regarding proposed Superfund CAD cell (original requests from 3/31/10 email in italics).

1. The calculations used to determine cost and time estimates for the disposal of PCBs in the CAD cell only and not including the cost of the remaining clean-up. In other words, for the estimated 25% cleanup you will achieve by 2014 with the use of a CAD cell, what volume of PCBs will be dredged and for how much money? Essentially slide 23 without the offsite work.

Response:

See email from D. Dickerson to K. Petersen dated 6/10/10. Also note that EPA is proposing, through an Explanation of Significant Differences expected to be released to the public later this month, that approximately 300,000 cy of Superfund sediment be disposed in a lower harbor CAD cell (LHCC), which represents approximately 33%, not 25%, of the total estimated sediments to be remediated pursuant to the 1998 Record of Decision (ROD). As mentioned in the 6/10/10 email EPA does not currently have a final stand-alone cost estimate for the LHCC. However, we preliminarily estimate the cost to dig the CAD cell at roughly $9 million, the cost to fill the CAD cell at roughly $30 million, and the cost to cap the CAD cell at approximately $3.4 million.

2. The monitoring data for sediment migration conclusions - including levels of contamination in the upper and lower harbor over time.

Response:

All of the Superfund sediment data is posted on the project web site (www.epa.gov/ne/nbh under "Sediment Characterization Data" and "Technical Documents") as it becomes available. Within Technical Documents, the best sub-pages to review sediment data are "Long Term Benthic Monitoring," "Environmental Monitoring" and "After Action Reports."

Regarding the net movement or flux of PCBs seaward from the Coggeshall Street bridge, information can be found in the 1998 ROD, p.7 or the Report on the Effects of Hot Spot Dredging Operations, pp.2-12 thru 2-14 (both available under Technical Documents). A net flux value of 0.2 kg PCBs per tidal cycle was used for the January 28, 2010 public presentation based on consultation with EPA's Narragansett, RI research lab.

3. Evidence of other instances where the same level of contamination and volume of sediment has been disposed of in a CAD cell.

Response:

The best evidence of similar usage of CAD cells is the navigational dredging and CAD cell disposal that has taken place in New Bedford Harbor since the 2005 timeframe. These "navigational" sediments are similar in both physical and chemical qualities as those proposed for the Superfund CAD cell, and they are (or were) located in close proximity to those proposed to be disposed in a Superfund CAD. The PCB levels in these navigational sediments generally range from 1 to 25 ppm, but with occasional levels recorded higher than this. Approximately 200,000 cy of PCB-contaminated navigational material has been placed into these CADs to date.

Other Superfund and non-Superfund sites that have used (or are planning to use) CAD cells for contaminated sediment disposal are listed in the 1/28/10 public presentation, available on the project web site under "Presentations."

4. Data and/or reports that support the assertion that bivalve will not penetrate the 3 foot thick cap.

Response:

While it is unlikely that clams will burrow as deep as 100 cm (3 feet), mere penetration of a cap would not be the real concern. The main concern is the depth of cap that is actively mixed by benthic organisms. The actively mixed sediment depth is unlikely to be influenced much by rare, deep burrowers even if they were to occur. Only when such burrowers are common and therefore actively mixing substantial volumes of sediment towards the surface, would there be a basis for concern. However, it is clear that scientifically measured mixing depths are rarely greater than 30 cm and are typically much less. A world-wide review of marine benthic sediment mixing depths (Teal et al. 2008, attached) found that average global mixing depths were 5.75 ± 5.67 cm, with most reported values being less than 30 cm and the maximum reported value being about 50 cm. EPA is unaware of any information that would suggest the New Bedford region or the northeast is likely to depart from the observed data. Typical mixing depths in New England are generally understood to be in the 5-20 cm range.

Two of the most abundant marine clams in the northeast that might be of concern are the soft shelled clam (Mya arenaria) and the hard shell clam (Mercenaria merceneria). Mya life history information indicates that 30 cm is the maximum burrowing depth and for Mercenaria it is much less. See attached species profiles and also the following links:

http://www.issg.org/database/species/ecology.asp?si=1159&fr=1&sts=&lang=EN

http://www.sms.si.edu/IRLSpec/Mercen_mercen.htm

Two other species that could be relevant to this question are surf clams and mantis shrimp, but surf clam habitat is near-shore rather than in-harbor and mantis shrimp have not been reported in New Bedford Harbor (nor identified in the site's long term benthic monitoring program).

5. Data regarding sediment consolidation after it is placed in the CAD cell and data regarding the impact of water released during settlement of sediment.

Response:

This data can be found in the recent computer modeling report for the proposed CAD cell, which is posted on the project web site; go to Technical Documents then Lower Harbor CAD Cell.

6. Any additional short & long term modeling information (in addition to the December 15, 2009 Technical Memorandum) for CAD Cell #2.

Response:

EPA has not collected any other monitoring or modeling information for the navigational CAD cell #2, other than the 12/15/09 referenced memo. However, the New Bedford Harbor Development Commission is in the process of finalizing a Post-Dredge Existing Conditions Report that would be responsive to this request; we will forward it as soon as it becomes final.

7. Use of the carbon binding strategy and its cost.

Response:

Based on the computer modeling performed to date, it appears the best potential use of activated carbon (AC) would be between placement seasons rather than as part of a LHCC cap. AC may not necessarily be required to ensure protectiveness, but is being considered as a best management, belt-and-suspenders approach. A rough, very preliminary estimate of the cost of placing AC into the cell is between $50,000 to $100,000.

Furthermore, to advance our understanding of the efficacy of using AC for this specific purpose (which EPA believes would be a first), EPA is again partnering with the Corps of Engineers to perform large scale laboratory studies. This effort has not yet started, and is currently scheduled to be completed in approximately 16 months. We will be sure to forward it as soon as it becomes finalized.

END